Contingency Planning Report

National Broadband Plan

1. Executive Summary

It is Government policy that all premises in Ireland should have access to high speed broadband and that no citizen should be left behind as the digital revolution continues. The National Broadband Plan (NBP) outlines the Government's commitment to deliver high speed broadband to every premises in Ireland, regardless of location, through a combination of commercial investment and a State intervention. While there is good progress being made in terms of commercial deployment, there is a very large number of premises, primarily in harder to reach rural areas that are not commercially viable and therefore the State intends to step in to ensure those premises are not left behind. This challenge is not unique to Ireland.

The NBP sets out a number of objectives and related sub-objectives that the project is expected to deliver. These include:-

Objective	Sub-objectives
Develop intervention strategy for areas commercial operators will not deliver high speed broadband.	Deliver intervention as soon as possible to ensure a national high speed broadband network for Ireland.
Provide high quality and reliable broadband services.	Every home / business to have access to high speed broadband with a choice of service providers. Ensure network can meet current and future data demand, new technologies and new ways of working.
Value for money.	Ensure a robust procurement strategy. Maximise re-use of existing infrastructure. Incentivise additional commercial investment.
Underpin Government policy on economic development and jobs.	Stimulate retention/growth in jobs in regional and rural Ireland, enable farming, e-health, trading online, tourism, savings for consumers etc.

The Updated Intervention Strategy launched in December 2015 was based on the targets set by the European Commission at that time which envisaged fast broadband (over 30Mbps) to all by 2020. The Commission's most recent strategy update, Connectivity for a European Gigabit Society, was adopted in September 2016 and sets a vision and policy actions to turn Europe into

a Gigabit Society by 2025. This includes access to connectivity of at least 100Mbps for all European households with the potential for speeds up to 1 Gigabit. Due regard would have to continue to be given to developments at a European level in the event that an alternative option were to be pursued in the context of delivering the NBP.

Significant progress has been made on the NBP with key milestones delivered, including:-

- Development of the High Speed Broadband Map which identified the required intervention area. This was developed in consultation with industry to ensure that all potential commercial investment meeting the required criteria was captured.
- Government approval of a detailed Intervention Strategy which is reflected in the draft NBP contract.
- Government approval of the Gap Funding model as the preferred funding option.
- Design, launch and management, included detailed governance, of a competitive dialogue procurement process.
- Detailed reappraisal of the proposed intervention.
- The development of the comprehensive draft contract which will govern a complex 25 year project. This has been reviewed and updated on an ongoing basis and contains important safeguards for the State and is consistent with the requirements set out in the EU State Aid guidelines for interventions in broadband.
- Agreement of the technical definitions and specifications of the high speed broadband network that is required (including the definition of the technology performance over the 25 years of the contract, the wholesale products that will be offered, how the speeds will be kept in line with urban areas, the network performance and maintenance requirements, and how all service providers will be offered equal access to the products).
- The development of a detailed deployment specification across a range of areas including:
    - the physical network deployment (considering the choice of infrastructure, the civil works required, resourcing, health and safety, environmental issues, 3rd party dependencies);
    - the IT systems that would be required;
    - the wholesale products required and how they would be offered to the market;
    - the industry engagement plan; and
    - the marketing and communications plan.

The length of the procurement process since late 2015 is due in part to the ambition of the plan; the complex nature of the solution to be provided; negotiating the considerable extent of the contractual requirements set out in the Intervention Strategy necessary to protect the State; and external delays including eir's proposal during procurement to provide high speed broadband to 300,000 premises in the original intervention area.

This paper provides an overview of the solution proposed by the remaining bidder and the make up of the related subsidy sought. It then addresses alternative options that may be available to deliver the NBP in the event that, for whatever reason, the current procurement process fails to deliver a solution acceptable to Government and focusses in particular on the option of

mandating a new, or existing, State entity to build a high speed broadband network. This analysis is informed by legal advices and by recent consultation with the European Commission (DG Competition).

2. Government commitment to deliver high speed broadband

2.1 The National Broadband Plan (NBP) outlines the Government's commitment to deliver high speed broadband to every premises in Ireland, regardless of location, through a combination of commercial investment and a State intervention. Government is acutely conscious that the benefits of high speed broadband extend far beyond providing faster upload and download speeds. Cross sectoral and cross societal benefits will arise as a result of delivery of this project. Most important, all citizens will have the opportunity to benefit from equal access to the digital space regardless of where they work or live.

2.2 The NBP is a key commitment in the Programme for Partnership Government set out in May 2016. It is also a core component of "Project Ireland 2040" which is the overarching vision for the National Development Plan 2018-2027 (NDP) and the National Planning Framework (NPF). The reflected strategy in the NDP, NPF and NBP is to align investment with strategic planning in order to provide a more unified long term vision for Ireland. Both the NPF and the NDP have particular focus on regional and rural development, including regeneration and sustainability. The NPF vision is underpinned by goals including: strengthened rural economies and communities; a strong economy supported by enterprise, innovation and skills; and access to quality childcare, education and health services. Project Ireland 2040 ultimately aims to create an additional 660,000 jobs.

2.3 The NPF recognises that "improved connectivity, broadband and rural economic development opportunities are emerging which offer the potential to ensure our countryside remains and strengthens as a living and working community". The provision of this infrastructure has an added importance against the backdrop of Brexit, which is expected to disproportionately impact regional and rural Ireland, and the ongoing investment by the commercial sector in providing fibre-to-the-home (FTTH) in urban areas.

2.4 Other key Government strategies also either depend in part on the delivery of the NBP for their success or will be implicitly supported by it. These include:

- Enterprise 2025
- Action Plan for Jobs
- Tourism Action Plan 2016-2018
- Digital Strategy for Schools 2015-2020
- eHealth Strategy for Ireland
- Action Plan for Rural Development
- eGovernment Strategy 2017-2020
- New National Digital Strategy

Successful and timely delivery of the NBP will contribute to ensuring the achievement of all of these cross Governmental goals.

2.5 The European Commission's strategy on Connectivity for a European Gigabit Society was adopted in September 2016 and sets a vision of Europe where availability and take-up of very high capacity networks enables the widespread use of products, services and applications in the Digital Single Market.

The vision relies on three main strategic objectives for 2025:

- Gigabit connectivity for all of the main socio-economic drivers;
- uninterrupted 5G coverage for all urban areas and major terrestrial transport paths; and
- access to connectivity offering at least 100Mbps for all European households.

Any revised approach to delivery of the NBP would have to take account of the stated policy at EU level as reflected in the above objectives.

2.6 On 15 December 2015 (Government Decision S180/20/10/1453) Government approved an updated National Broadband Plan Intervention Strategy. The Intervention Area is represented as Amber in the Department of Communications, Climate Action and Environment's (DCCAE's) High Speed Broadband Map (www.broadband.gov.ie). At the same time, Government approved the launch of the procurement process to appoint a company or companies to design, build and operate the open access wholesale network to deliver access to high speed broadband services to those premises.

3. Intervention Strategy

3.1 The key elements of the Government's Intervention Strategy, which are reflected in the draft NBP contract, are as follows:

- a wholesale open access network delivering minimum download and upload speeds of 30Mbps and 6Mbps respectively (although, under the proposed solution, the majority of premises will initially receive higher speeds of 150Mbps which is comparable to or exceeds what is on offer in urban areas);
- adopting the most efficient network rollout for the technology being deployed;
- a solution for a future proofed network, with regular review to ensure the network is keeping pace with demand;
- a requirement to meet specific speeds and connection times to address the needs of the business community;
- a requirement to cost final tender based on 100% coverage to all premises in the intervention area over the 25 years of the contract, in the most efficient and cost effective way by looking at all technologies; and
- conditions to ensure equal access to the network for all retail operators including a wholesale company which will have separate marketing and branding to any retail

company, and non-discriminatory systems that promote retail competition among large and small retailers, with affordable prices to customers.

3.2 The Intervention Area now represents over 540,000 premises in the State. Within the Intervention Area are approximately 1.1m citizens, 68% of Ireland's farms, 21% of primary schools and over 44,000 small businesses (primarily micro).

3.3 In the event of a revised approach, the key elements of the Intervention Strategy outlined at 3.1 above should, at a minimum, be retained as the majority of them are required under the State Aid Guidelines set down by the European Commission (for example the need for an open access network provider, equal access, future proofing etc).

4. Existing Procurement Process / Project Plan

4.1 Overview

The existing procurement process takes the form of a competitive dialogue procedure which is a type of procurement commonly used for large infrastructure projects where the technical specifications cannot be established with sufficient precision at the commencement of the procurement and where a contract cannot be awarded without prior extensive engagement with prospective bidders because of specific circumstances related to the nature and the complexity of the project. Use of this process was particularly important for the NBP where re-use of existing infrastructure and technology options that could be used to roll out high speed broadband played a key part in arriving at a final set of requirements.

Five bidders applied to participate in the procurement process and three successfully passed the pre-qualification process in 2016 and were invited to participate in the dialogue phase of the procurement process. The procurement process was delayed in 2016 as DCCAE was required under State Aid rules to evaluate a commercial proposal by eir to provide high speed broadband to 300,000 premises which were up to then included in the Intervention Area. SIRO, the joint venture between the ESB and Vodafone, withdrew in September 2017 and eir withdrew in January 2018 (both for commercial reasons) and this resulted in further delays to the process.

The procurement process is in its final stages with the remaining bidder having submitted its final tender on 18 September 2018. The submission has been evaluated by the evaluation teams, assessing the submission under a number of criteria (i.e. contract compliance, commercial and technical).

4.2 Project reappraisal

In line with the requirements of the Public Spending Code a comprehensive financial and non-financial reappraisal of the NBP State led intervention was undertaken in March 2018 and concluded that continuation of the procurement in a one bidder scenario was the optimum approach in order to deliver the strategic objectives of the NBP. In addition to this reappraisal the Department has carried out a root and branch review of the final proposed technical, commercial and governance requirements to assess whether the proposed solution if agreed

with the remaining bidder would represent the best outcome for the State. This review took into account the likely costs, the likely benefits and the governance arrangements set down in the contract. The assessment concluded that the existing project could be recommended to Government if the strong governance mechanisms outlined in the report are implemented. The conclusion of this assessment is set out in Appendix IV.

4.3 Ownership

In July 2016 Government selected the Commercial Stimulus Model (Gap Funded Model) as the ownership model for the State led intervention. The Gap Funding Model means that the State will be using public subsidy to fill the gap in the commercial business case for the provision of high speed broadband. This is one of a number of standard approaches used for interventions of this nature. This approach was reconsidered as part of the project reappraisal carried out in March 2018 and it was concluded that the Gap Funded Model continued to be the optimal ownership model.

Under this model of ownership it is envisaged that the preferred bidder will be 100% shareholder in a subsidised company, NBPco, though with significant protections built in for the State in the event of non-performance by NBPco.

4.4 Corporate Structure

NBPco is the term used to describe the Special Purpose Vehicle (SPV) that will be incorporated by the preferred bidder for the purposes of delivering the NBP. The remaining bidder's ownership and contractual structure is outlined in Figure 1 below:-

4.5 State aid considerations

The European Commission published detailed Guidelines for Member States in relation to State aid for broadband in 2013. Ongoing engagement with the European Commission on the Intervention Strategy and how the Irish plan will be compliant with the Guidelines set down has been very positive. A series of bi-lateral meetings have taken place with DG Competition in the

Commission who have responsibility for overseeing State aided programmes. A draft State Aid Decision has been provided by the European Commission and final notification in respect of the State aid application is being finalised by DCCAE. DCCAE is confident that a final positive Decision will be received within 4-6 weeks of the final notification.

4.6 Technical Solution

The aim of the proposed intervention is to ensure that 100% of premises within the Intervention Area have access to high speed broadband in line with comparable products in commercial areas. This objective is also consistent with the objectives set out by the European Commission. The delivery of the current project as proposed by the remaining bidder is based on:-

- a predominantly fibre to the home (FTTH) solution;
- a 150Mbps product as the main product initially offered on a wholesale basis to service providers such as Vodafone, Virgin Media, Sky, eir, other local operators etc;
- the re-use of eir's network [redacted]
- the use of fixed wireless, wireless technology (or other alternative solutions) for a small and yet to be determined proportion of premises. The quantity and location of premises that may not receive a full fibre solution will be decided during the rollout where the cost to address individual premises with fibre becomes clearer. The contract allows for up to 2% of premises to be served by a wireless solution and for additional premises (i.e. more than 2%) to be passed using alternative solutions once approval is granted by DCCAE on a case by case basis.

4.7 Timeframe for delivery

The contract to be awarded is a 25 year contract. Based on the information provided by the remaining bidder, full deployment will take up to 7 years, though the programme will have ramped up to its optimum deployment rate in year 2. This is reliant on the speed of eir's "make ready" programme for existing pole and duct network which is a pre-requisite of NBPco placing fibre on the eir network. [redacted] The remaining bidder has also accepted an obligation to provide services for 10 years beyond year 25 where it is commercially viable at that time to continue to offer services and maintain the network without further subsidy. If at year 25 the remaining bidder is not willing to maintain services to all premises connected at that time, the Minister will have the right to take the NBP network from the bidder at a market rate to be determined independently at that juncture.

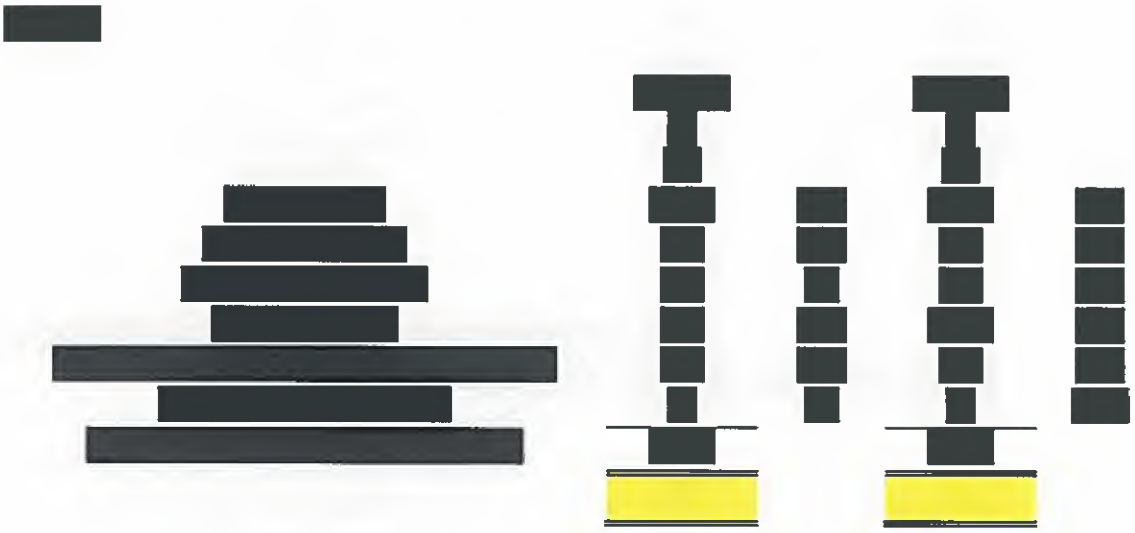
4.8 Cost

The total cost to build and operate the network over 25 years is estimated [redacted] in nominal terms. This includes the:

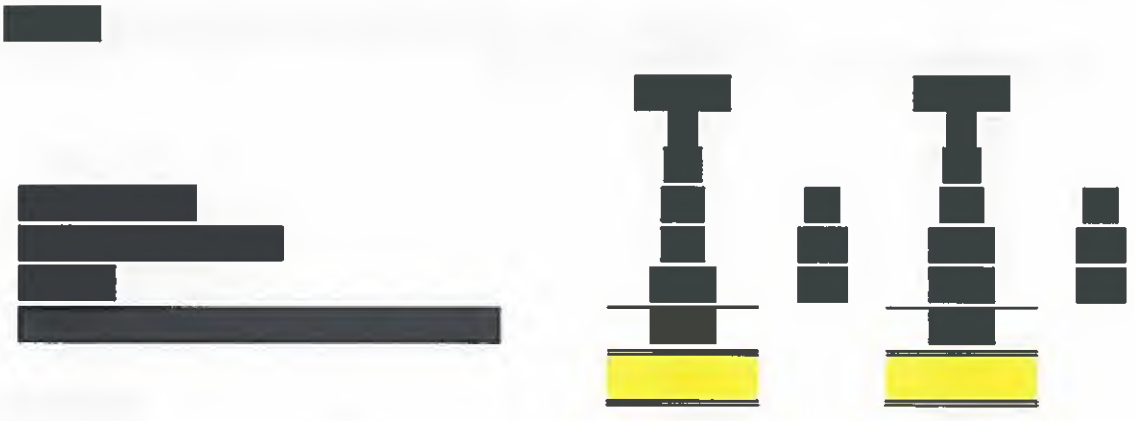
- initial capital costs to build fibre past all premises;
- capital cost of providing connections to end-users who order the service over the 25 years;

- rental of eir and MAN's infrastructure over the 25 years;
- operating costs over the 25 years; and
- the equity funding finance costs and dividends.

A breakdown of these costs[1] is set out in Figure 2 below.



The project will be funded over the 25 year contract using a mix of private equity funding, commercial revenues and subsidy from the State (see Figure 3 below). The funding from the State will represent [redacted] of the project when taking into account future revenues expected. There will be an initial injection of private equity funding over the first few years. As the network is deployed NBPco will start generating revenues, where this is estimated will ramp up to an [redacted] take-up rate over the contract period. The subsidy element is discussed in more detail below.



The total subsidy is a capped subsidy based on the remaining bidder's final tender provided on the 18 September 2018. However, the overall project subsidy has been broken into three "buckets" . One bucket consists of the Deployment Subsidy and Connection Subsidy. The capped

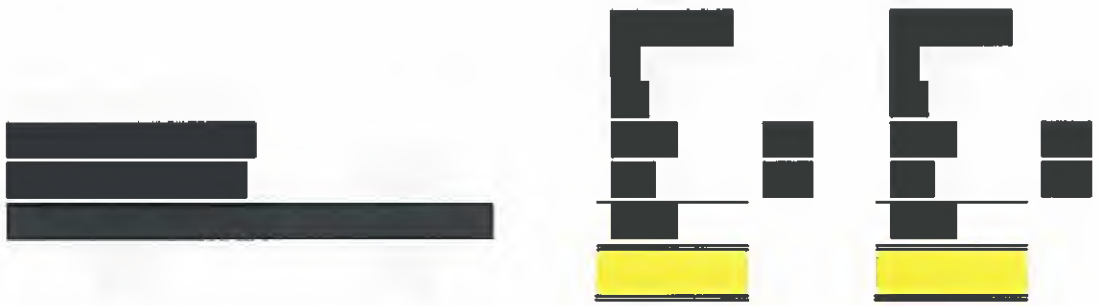
[1] Unless stated, all figures in the report are VAT exclusive

Deployment Subsidy and Connection Subsidy are committed from commencement of the contract once NBPco achieves its deployment and connection milestones.

Bucket 1 – Deployment Subsidy and Connection Subsidy

1a) Deployment Subsidy - Subsidy earned by the NBPco for achieving milestones with respect to the build of the passed network (the build contracts will be subject to a procurement process with oversight from the Department). This subsidy will be earned once the work is completed and permitted costs incurred[2]. This subsidy is a capped amount and will be paid over the deployment period of approximately seven years.

1b) Connection subsidy - Subsidy earned by NBPco for achieving milestones with respect to the build of connections to end-users, which result in commercial revenues being generated by NBPco. This subsidy will be earned once the work is completed and permitted costs incurred. This subsidy is a capped amount and will be paid over the 25 year contract period as end-users order high speed broadband services.



The two other capped buckets of subsidy are conditional on the outturn of specific events compared to that forecast in the Project Financial Model. These specific events are outside the control of the remaining bidder.

Bucket 2 – Conditional Subsidy

This is described in detail under contract assumptions in the commercial protection section. Any conditional subsidy will only be earned once the work is completed and permitted costs incurred. This conditional subsidy is capped at the amounts below and will be paid over the 25 year contract.

[2] The payments of subsidy are based on the submission of evidence of completion of certain milestones, the detailed requirements are set out in the contract e.g. invoices for materials, invoices from subcontractors

Bucket 3 - Contingent Subsidy

Under this bucket NBPco has the right to apply for further subsidy to compensate for the negative impact on NBPco's business case of a commercial operator taking customers from the target area with a new commercial investment. This contingent subsidy is capped at the amount below and will only be paid where the bidder proves its bid model from 2018 was negatively impacted by commercial encroachment post contract award.

In the extreme scenario where all of the conditions are met to trigger all of the conditional subsidies and contingent subsidies, the **total estimate of subsidy** would represent the aggregate of the deployment subsidy, connection subsidy, conditional subsidy and contingent subsidy.

Worst case scenario subsidy (in nominal terms)

The contract also provides for a cost of build efficiency and in life profit clawback mechanism to the State whereby the State will

5. Contingency options considered

5.1 A range of contingency options to deliver the NBP objectives which could be implemented in circumstances where the NBP procurement process does not reach a successful conclusion have been identified and considered (further detail in Appendix 1). These options are broad ranging and include: interventions to encourage further rollout by commercial operators;

new or revised procurement processes at a national, or regional\local level; and setting up a new State Agency to deliver the NBP or mandating an existing State Body to deliver the NBP on behalf of the State.

5.2 The purpose of considering these contingency options was, in the event that the current procurement process was no longer viable or did not deliver value for money, to provide an alternative approach which:-

(a) could deliver on the commitment in the Programme for Government to ensure next generation broadband is available to every household and business in Ireland;
(b) could deliver high speed broadband quickly (at least 30Mbps download and 6Mbps upload at the outset and be future proofed in accordance with the European Commission's latest strategy, Connectivity for a European Gigabit Society, to deliver at least 100Mbps download by 2025);
(c) could be delivered at a reasonable cost; and
(d) represents value for money.

5.3 ***4G and 5G***

There have a number of reports suggesting that the wider availability of 4G and/or the rollout of 5G in the next few years could render the NBP redundant. The factual position is that 4G and 5G networks will never be deployed to reliably and consistently address the broadband requirements of homes and businesses in rural Ireland. 4G and 5G networks will:

- provide a complimentary service (outdoors and on the move) to the NBP high speed broadband service (indoor suitable for home or business use);
- require a significant amount of fibre to be available to effectively deliver mobile services, which will be made available by the NBP;
- (through commercial operators) continue to target the most densely populated locations with their commercial rollouts; A report recently published by Comreg outlined that increasing geographic outdoor mobile coverage of 30 Mbps from 18.3% to 99.5% geographic coverage would cost €1.860 billion and require 5,910 new sites. Mobile operators will never cover all rural premises with 5G as these costs are prohibitive not to mention the challenges of acquiring and building thousands of new sites across rural Ireland.
- not be suitable to provide a high quality broadband service inside premises, as they provide coverage primarily outdoors;
- probably has a life span of 7-10 years, after which 4G and 5G technologies are likely to be over taken by the next generation of mobile technology
- continue to cater for less than 10% of broadband data usage in Ireland, whereas fixed networks cater for 90% of broadband data usage in Ireland (i.e. home and business users). Mobile networks will cater for lighter users for people on the move e.g internet browsing, social media etc whereas fixed networks will cater for homes

users who tend to use the internet for high data applications, banking, business, video conferencing etc.

Remaining options

5.6 Having assessed the potential alternative options (assessment attached at Appendix 1), it was concluded that the contingency option most likely to result in achieving the Government's objective of providing high speed broadband to every premises in Ireland would be to mandate an existing, or new State agency to build a high speed broadband network to offer services in line with comparable products in commercial areas. It was recognised, however, that proceeding with the current procurement process and the award of a contract, should there be a compliant bid that is acceptable to Government, would represent the solution most likely to result in high speed broadband services being available within the NBP intervention area in the earliest possible timeline.

A dedicated broadband agency in State control

Two options have been identified in terms of proceeding with a dedicated broadband agency. These are:-

(i) establish an in-house (DCCAE initially) SPV 100% owned by the State; or
(ii) mandate an existing State Agency/State Body to establish an SPV to be responsible for delivery of the NBP.

Under both (i) and (ii) the SPV would be mandated to:-

- procure the build/connection and maintenance of the network; and
- tender for a managed service contract to operate/sell services (providers such as Openeir/Siro/Enet/BT).

Consideration of option (i) – In-house SPV

In terms of (i) above it is proposed that as an interim measure, the SPV, would be established as a standalone entity within DCCAE (akin to GSI and similar to the approach taken in the UK (BDUK)). Consideration could then be given to the appropriateness of establishing a standalone State Agency or transfer the functions to an existing State Agency (e.g. Transport Infrastructure Ireland) to oversee delivery of the NBP once the project is established[3]. An in-house structure

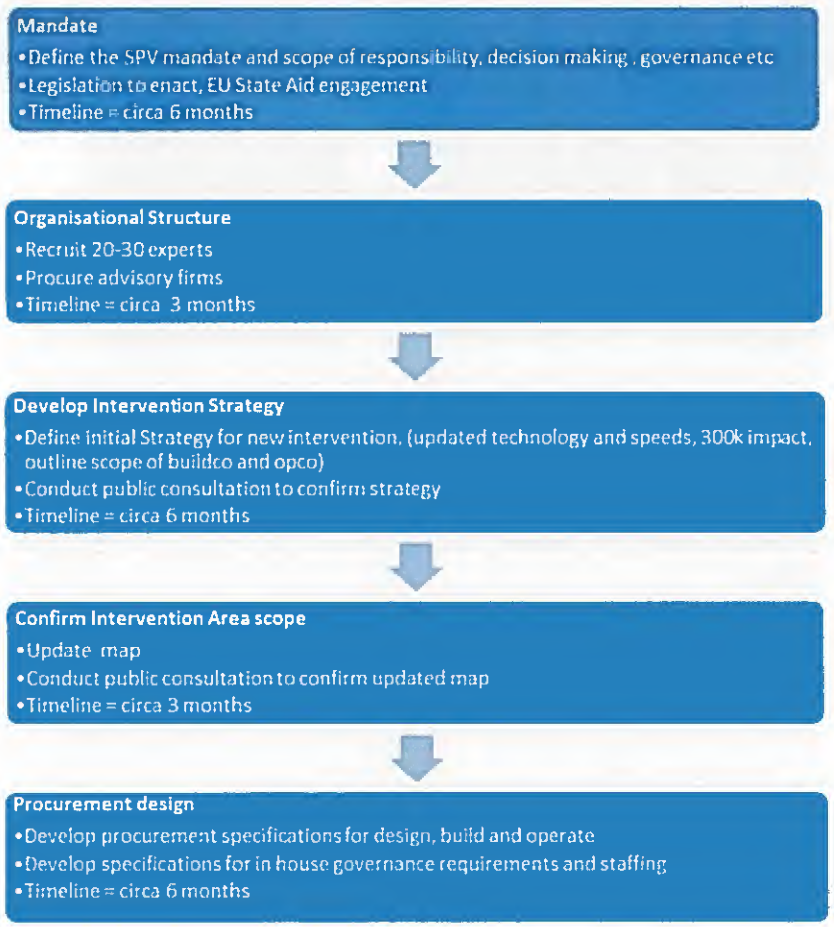
[3] This is consistent with the programme for Government which states "To manage . . . all the State's commercial communications contracts, we will consolidate these responsibilities into a single entity. This will act as a centre of expertise for managing all the State's commercial activities in communications such as the TII fibre ducts, the MANs network and masts on OPW lands, as well as the ultimate National Broadband Plan contract". The establishment of a separate agency to manage any NBP contract still remains on the table given the scale of the contract and the need to have in place specialist expertise to oversee its governance on a long term basis.

could be established relatively quickly retaining and utilising expertise built to date in the process. There would be a need, however, to engage additional expertise (20 – 30 new staff) and professional advisors which would have to be procured to supplement existing staff before activities could be substantially progressed. This could take several months and would be subject to that expertise being available and whether current market rates could be matched sufficiently to attract this expertise to an in-house SPV. The cost of such expertise is likely to be significant over the life of the project.

Key steps to delivering an in-house SPV

The key steps in initiating an in–house SPV are described in Figure 4 below. This would be the minimum that would be required to enable a new public procurement exercise to start. This initial period to enable the delivery of a procurement is likely to take circa 2 years to complete.

Figure 4 – activities required for set up and of role of any new SPV under State ownership



Procurement of project under in-house SPV

Once the SPV is established and has developed a firm intervention strategy with associated intervention area, scope and specifications for the design, build and operate activities, the SPV could then conduct a series of public procurements to procure these services. Figures 5 and 6 below describe a design, build and operate approach but this approach would be determined through the intervention strategy exercise. In parallel, to the procurement there would be a State aid notification exercise undertaken by the SPV to seek State aid approval where required for the project.

Figure 5 – Procurement process to be followed by the SPV

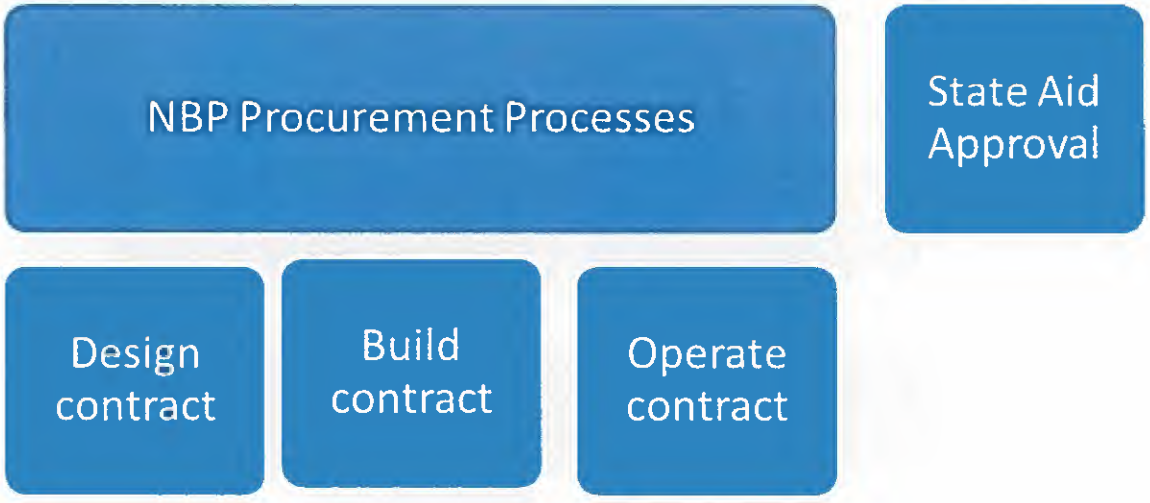


Figure 6

The procurement stages that would be required for each of the new contracts mentioned above would involve:

Drawing on the learning from the NBP procurement process it could be expected that a new procurement would take a minimum of 18 months.

If this model were to be pursued it would be underpinned by the extensive NBP contract which has been developed over the past number of years to ensure optimum governance of project.

The SPV would then undertake the governance responsibilities of overseeing each of these contracts, ensuring contractual obligations are met and managing the payment of invoices received from the contractors.

Benefits

- Greater State control over process and infrastructure.
- Greater control of annual expenditure and budget allocations.
- Partly leverages work to date and limits any further delays to the minimum possible
- Likely to comply with State aid requirements.

Risks

- It is likely to take in the order of 3 years before new contractors would be appointed.
- Construction and market risk will rest on the State.
- The risks already identified in relation to dealing with existing infrastructure providers is not likely to be any less under this option.
- Ability to attract and procure the required expertise necessary to deliver the project.
- Uncertainty of the timescale and costs to complete the delivery the project. The risk of increased costs to deliver the project could be higher under this model on the basis that it is more likely that private sector would drive efficiencies given its commercial mandate to make profit.
- A loss of economies of scale could occur in relation to the purchase of materials and labour if the State Agency procures the build of the network in a piecemeal and slower

way to that envisaged under the current procurement process. This would ultimately drive higher costs.

- Requirement to develop a new procurement process and/or a new strategy (for example the minimum speeds required).
- Increased risk of legal challenge from other providers where commercial operators invest in deploying additional infrastructure adjacent to, or in, the intervention area.
- Greater State resources/funding required to deliver the project.
- Loss of private sector commercial and technical experience in the management of costs and rolling out networks of this scale.
- Primary legislation may be required to give effect to ringfenced structures within DCCAE.
- Private operator would be better placed to seek to leverage the NBP assets for other commercial opportunities .

Consideration of option (ii) – Mandate existing State body

In terms of option (ii), consideration was given as to whether an existing commercial State body would have the capability of delivering the project on behalf of the State and that body would then be mandated to deliver the NBP on agreed commercial terms by establishing a separate/stand-alone SPV. Under this option, learning from the current procurement would also be leveraged.

This was considered an attractive option given that a number of State bodies who already engage in procuring major infrastructure projects could be well placed to deliver a project of this scale and nature. In terms of this option, the key benefits of mandating an existing State body were identified as follows:-

- established commercial entity with good public perception / strong reputation for delivery;
- strong track record of managing and delivering large scale infrastructure projects;
- extensive commercial experience which could be leveraged in terms of procurement and managing key sub-contractors; and
- ability to leverage existing expertise and (in some cases) network infrastructure to deliver NBP.

The key risks associated with this option were:-

- compatibility with EU Procurement rules and State Aid rules;
- capability to deliver same specification, 100% reach and within originally envisaged timeframe; and
- impact on existing business of State Agency.

There is also the question as to whether this option would cost less or would represent better value for money as compared to the current procurement process.

With regard to this option, the possibility of mandating the ESB as the State agency responsible for delivering the NBP was explored. It was envisaged that this would involve the ESB establishing a separate SPV for the purpose of delivering the NBP. The SPV would be created to fulfil specifically defined objectives meaning that the activities undertaken are limited to ensure clear transparency and ring-fencing of project assets, liabilities, revenues and costs. On the basis of discussions with the European Commission, this particular course of action is not considered a viable option as it is highly unlikely to comply with Procurement rules and State Aid rules. The position of the European Competition was clear, that the State cannot in any circumstances give State aid to an economic undertaking without a procurement process. The advice of the Attorney General was sought in the matter and the preliminary advice (copy attached) found that this option would carry significant legal risk and that it was hard to conceive how such a direct award could be justified from a procurement law perspective. The advice also identified a significant risk from a State aid law perspective as it would involve a direct grant to a State body which is also considered to be an undertaking for the scope of application of the State aid rules.

5.7 Start Again

In assessing alternative options, it was not considered a viable option to recommence a procurement process along the lines of the existing process, where the market was invited to come forward with bids to design, build and operate a high speed broadband network to serve the NBP intervention area. Having regard to the experience of the NBP procurement process, there was limited grounds for optimism that the market would react in a positive manner to a new procurement process where a similar level of risk is to be borne by the market. A significant market consultation would be required to better understand the commercial sector appetite.

6. Material Considerations for delivering alternative options

6.1 State Aid Implications

As noted above, it is considered likely that the current procurement will meet all State aid requirements and result in a positive Decision from the European Commission.

Following recent discussions with the European Commission on proposed alternative options, it appears that Option (i) (a new broadband State agency) could meet State aid requirements, but that Option (ii) (mandating the ESB) would be highly unlikely to receive a positive State aid decision.

Consideration was given to pursing the Service of General Economic Interest (SGEI) model of State aid, however, it is clear from discussions with the Commission that this would require significant consultation and would be difficult to establish in the context of a broadband roll out as envisaged. While under an SGEI model there may be more flexibility around the procurement rules for awarding grant aid to build the network, it is not clear, however, whether there is any likelihood of this approach allowing for a faster or cheaper rollout and removing any risk of legal

challenge from the commercial sector. The preliminary legal advice concludes that it is unlikely that the Government could successfully pursue the SGEI option.

6.2 Procurement Implications

In the event that an alternative option was to be pursued, it is likely that the market could react negatively to a new procurement process. The existing process has taken considerable time and has cost bidders significant capital (amounting to millions of euro) to participate with no certainty of an outcome. It is likely that the incumbent, eir, would be the only willing candidate to build the network, however, it is understood that eir is very focussed on its mobile and urban network upgrades and may also be reluctant to take on the challenge of building the NBP network at the same time.

6.3 Cost Implications

The costs of the current process have been continuously modelled over the past three years and there is a significant degree of understanding of the likely costs - known and unknown. It is not possible to say with any certainty what an alternative approach might cost should a new procurement process be launched. It must be assumed from the outset that the costs would be similar, if not more, than the current process. As time goes by the cost of construction increases with inflation and there is an increased risk of labour resources becoming scarce as other companies and Member States proceed with their fibre roll outs.

6.4 Timeframe for delivery impact

Under the existing procurement, it is envisaged that works could start in 2019 and that roll out will take 7 years but with the vast majority of premises covered within the first [ ] years. Any change to the existing plan is likely to result in significant time delays and it is without doubt that any alternative approach will take longer to build.

6.5 Conclusion

In the event that the ongoing NBP procurement process does not conclude with the selection of preferred bidder and the award of a contract, then mandating an in-house entity to deliver the NBP is considered the best option to ensure achievement of the Government's high speed broadband objectives.

High Speed Broadband Working Group

Contingency options Analysis

APPENDIX

Appendix Options analysis

Option 1	Establishment of a State entity (whether new or existing) charged with delivery of Government objectives
Scope	Establish a dedicated broadband agency mandated to deliver the NBP objectives. The Agency could be either on a stand-alone basis or reside within an existing State agency. The agency would be responsible for putting in place future strategy and new network build identified as being required to address market failure and consulting on and putting in place a future strategy for market intervention(s) to deliver on Government objectives. The agency could also have a role in ensuring appropriate access to critical infrastructure, through engagement and facilitating legally binding access agreements or by advising the State around any acquisition of physical assets deemed necessary. The Agency could either at establishment or a later point be conferred with additional functions. For example, consideration could be given to the Agency becoming the centre of expertise for all the State's commercial activities in communications such as the TII fibre ducts, the MANS network and masts on OPW lands, provided for in the Programme for a Partnership Government (May 2016).
Cost	The cost is unknown as it is difficult to quantify at this point as the Agency would have the ability to adopt a number of different means to achieve the objectives and depending on the approach taken, this would impact on cost. However there is a significant risk that the cost would be higher than that under the existing procurement process. While capital and operating costs are likely to be broadly similar, the

	inability to leverage efficiencies as a commercial operator, is likely to result in higher costs than under the existing procurement process.
Timeline	It is difficult to predict the time required but it is highly likely to be less efficient than the current procurement process undertaken by a commercial operator in that in addition to the time required to establish the Agency, it would then need to procure contractors and carry out any further market analysis required. The time would also be impacted by the options that the Agency chose to deliver on its objectives.
Longevity	As State would control the infrastructure and investment, it could ensure that the long term needs of those in the IA are served
State aid	State Aid application(s) would be required in respect of any further interventions
Procurement	The Agency would likely be required to have new procurement processes in respect of further interventions
Key benefits	• State would retain control over where and when certain investment is made. • The entity would be responsible for new network build identified as being required to address market failure and that infrastructure could stay in public ownership • While its primary function would be delivery of Government objectives in relation to high speed broadband, the entity could be conferred with additional functions either at establishment or a later date and thereby achieving additional Government objectives/commitments • Potential for new infrastructure to be revenue generating
Challenges	• Time and cost of setting up a new agency and loss of certain efficiencies that an existing commercial operator can generate • Uncertainty as to when all premises would receive a high speed broadband service • As the agency would be funded from public monies, the State would be taking all or most of any risks associated with investing in new infrastructure (build risk, technology risk, network risks including obsolescence, demand risk), but would also derive any benefits associated with the new infrastructure in terms of revenue upside

Option 2	**Two phase state intervention** **Phase 1: Subsidise rollout of fibre backhaul to selected locations (close to or including masts) in the Intervention Area (IA) to incentivise further commercial investment** **Phase 2: Subsequent intervention to reach unserved premises**
Scope	This option would involve two separate State interventions. Phase 1 Initial State intervention: A new intervention strategy would be designed to subsidise the rollout of fibre backhaul to selected locations thereby increasing the availability of fibre backhaul to existing mobile sites to spur on further commercial investment. As operators finalise their commercial rollout plans to upgrade equipment at these mobile sites, together with any other new commercial investment, a new mapping exercise would be undertaken to identify unserved premises. Phase 2 Subsequent State intervention: A new State intervention would be undertaken to subsidise the rollout of high speed broadband to reach unserved premises. The number of premises that would be required to be served under Phase 2 is an unknown as it would be dependent on the scale of commercial rollout at that time, including new infrastructure deployed by commercial operators using the State aided backhaul infrastructure.

	• The stock of existing mobile sites in the IA covers c.60% of rural IA premises (i.e. c.325,000). Mobile/Fixed Wireless Access (FWA) operators are currently serving customers with basic broadband in the IA using these sites. The quality of service offered is impacted by the lack of fibre backhaul connections to these sites. Bringing a fibre backhaul connection to the sites would enable mobile/FWA providers to improve the quality of services they offer end users in the catchment area of each existing site. • It is estimated that the Phase 1 Initial State intervention could improve mobile performance/data connectivity through 4G/5G mobile services for around 50% of IA premises. This is conditional on operators with spectrum investing to the extent necessary to upgrade the electronics at the masts to enable the provision of improved broadband services. The percentage of premises in each area is likely to vary considerably depending on the existing stock of mobile sites in the area. • Phase 1 would only improve services for the remaining c.50% of IA premises who are not within the reach of existing sites (e.g. due to forests, mountains) unless commercial operators also invested in the rollout of FTTH. These premises would not see improvements from Phase 1 and would have to wait until Phase 2 (subsequent State intervention). • Bringing fibre backhaul to rural areas would enable the State to purchase fibre backhaul for future 'Tetra' sites (or sites which will deliver mobile services to public bodies such as An Gardaí, Ambulance etc.) and thus offer improved mobile services to these end users. • FWA operators are likely to welcome this initiative as they could then target specific premises with improved fixed wireless services.
Cost	• The cost associated with the initial State intervention (Phase 1) is likely to be relatively modest (i.e. estimated to be in the hundreds of millions, however, this has not been modelled by DCCAE). A revenue stream for fibre backhaul sales would be created. • As the scope of a subsequent State intervention (Phase 2) is unknown it is difficult to quantify the likely total cost to serve 100% of the IA with high speed broadband. There is a significant risk that the cost would be higher than that under the existing procurement process as the reduction in deployment costs would be more than offset by reduced revenues from the significant reduction in the number of premises in the IA area.
Timeline	• It is estimated to take c.5 years to complete the rollout of fibre backhaul to existing sites in the IA and for the subsequent delivery of improved broadband services to be delivered by commercial operators: o <1 year to award the new contract, o 2 years to deploy a fibre backhaul network, o 2-3 years for improved fixed wireless service to be delivered by the operators. As noted above, Phase 1 is estimated to improve services available up to c.50% of IA premises over a 5 year timeline (assuming commercial

	operators avail of the opportunity). However, as the scope of a subsequent State intervention is unknown it is difficult to predict the time required to reach all remaining premises.
Longevity	While it is estimated that commercial investment following the Phase 1 intervention could deliver high speed broadband up to c.50% of IA premises, there is a real risk that it will not be future proofed and will not meet the growing needs of users in the IA over the long-term. There is a risk therefore, that a Phase 2 intervention would not only be required to ensure a high speed broadband service for the c.50% of premises not being offered a service by FWAs, but also might be required to meet the long-term needs of those premises initially served by a FWA operator.
State aid	A new State aid application would be necessary which would require a new consultation on the Intervention Area Map. Phase 2 could require duplication of State Aided infrastructure over the long term (where fixed wireless is a short term solution and full fibre becomes a necessity).
Procurement	Two separate procurement processes would be required.
Key benefits	• Low Phase 1 costs • Phase 1 could result in improved broadband services for c.50% of IA premises (i.ec.270k premises)
Challenges	• Phase 1 could take up to 5 years to reach c.50% of premises, and is conditional on operators with spectrum investing in upgrading their equipment at the sites. The improvement in broadband quality may vary from operator to operator and from site to site. • Phase 1 would not result in any improvement for other IA premises which are outside the catchment area of existing sites. • A large cohort of IA premises would be waiting for a very long time to see improved services. • Cost of Phase 2 is unknown at this time • Phase 1 could face State aid challenge if the deployment of fibre backhaul favoured a particular technology (e.g. fixed wireless

	versus fibre to the home)

Option 3	**Facilitate and accelerate further commercial rollout (including 5G), followed by later State intervention**
Scope	- Under this option the State would not intervene in the market in any significant manner until after ComReg completes the 700Mhz auction (to be completed by 2020). - After the auction, operators would then be given a period of time to finalise their rollout plans for commercial 5G rollout. The commercial deployment of 5G services is expected to occur in rural Ireland from 2020 to 2025. - The State would promote and support commercial investment in 5G to rural areas. - Commercial 5G rollout is likely to improve mobile performance/data connectivity in some rural areas, in particular where it is low cost to the commercial providers and contiguous to the more densely populated areas. However commercial 5G rollout is unlikely to be available to all IA premises given geography of rural Ireland, forests, mountains etc. - After operators' rollout plans are finalised, a new Intervention Area mapping exercise would be undertaken to identify unserved areas. - A State intervention programme would be designed and implemented to subsidise the rollout of a high speed broadband network to reach unserved premises.
Cost	• No significant cost to the State for a number of years. • As the extent of 5G rural rollout by commercial operators is unknown, the scope of a subsequent State intervention is unknown and so it is difficult to predict the cost required to reach all remaining premises with high speed broadband.
Timeline	• 5G rollout in rural areas is expected to occur between 2020 to 2025 (but is unlikely to serve all areas). • As the extent of 5G rural rollout is unknown, the scope of a subsequent State intervention is unknown and so it is difficult to predict the time required to reach all remaining premises with high speed broadband.

Longevity	Commercial 5G rollout unlikely to meet the long-term needs of IA users who are within the rollout areas of 5G commercial plans.
State aid	A new State aid application would be necessary.
Procurement	A procurement process would be undertaken after 2020.
Key benefits	• Low/no cost to the State for a number of years
Challenges	• Commercial 5G rollout is unlikely to be available to all premises given population spread and geography of rural Ireland, forests, mountains etc. • 5G services are unlikely to meet the long-term needs of IA premises, i.e. currently users with a fixed high speed broadband connection on average consume c.150G of data per month compared with 5G of data in the case of mobile consumers • The scope of a future State intervention would remain unknown for some time.

Option 4	**State subsidised high speed network with lower service quality requirements (i.e. <30Mbps at peak hours of use), with or without a degree of future proofing**
Scope	This option would involve subsidising high speed broadband to 100% of IA with a reduced quality of service during peak hours of use (i.e. 30 Mbps) using a single procurement process. The new network would not be required to meet the Commission's NGA standards, but would be required to deliver a step change in quality compared to existing basic broadband services on offer.

	It is likely to result in the deployment of mainly fixed wireless services rather than a FTTH solution. If a wireless solution is used it would require extensive build of new mobile sites in rural areas (approx. 6,500 new sites)
Cost	Reducing the quality of requirements would not reduce the total cost of intervention compared to the current procurement process, due to the large number of new sites required to cover the IA. This solution would, however, be a less costly option to reach the c.50% of premises within the IA that are within coverage of existing sites.
Timeline	Reducing the quality requirements may enable quicker deployment compared to a contract with higher quality of service requirements.
Longevity	It may not meet the growing needs of users in IA but this depends on the level of future proofing required in the procurement process.
State aid	Risk of State Aid challenge from existing basic broadband operators in IA where a step change to the Commissions NGA standard cannot be demonstrated. (The Commission has clearly signalled its ambition that Member States would target services of 100Mbps and above as a minimum) Risk to €75 million in ERDF funding approved for Ireland's NBP if network is below NGA standard.
Procurement	Single procurement process
Key benefits	• Single procurement process • Should deliver a step change in broadband performance to certain hard to reach locations • Operators would be required to deliver some level of future proofing.
Challenges	• If the services offered do not deliver a real step change from existing basic broadband services, take-up may be low. • It may force more commercial investment e.g. from companies faced with an alternative wireless network that would not rely on building on/renting such companies' existing infrastructure) • Such companies could deploy a strategy to mitigate any losses from a wireless network thereby increasing the risk to a wireless project

	Risk that EU Commission would not approve State aid application, or challenge by existing commercial operators, where network did not represent a step change in service

Option 5	State subsidised high speed network delivered in a phased approach leaving most expensive to reach premises to final phases
Scope	This option would involve subsidising a high speed broadband network to 100% of the IA delivered in a phased approach leaving the most expensive to reach premises to the final phases. This could be implemented in a number of different ways, for example: • Scenario 1: In Phase 1 cover 450k IA premises (i.e. 80% of IA, or 19% of the 2.3 million premises nationally), and in Phase 2 cover the remaining 100k (20% of IA or 5% of premises nationally). • Scenario 2: In Phase 1 cover 515k IA premises (i.e. 95% of IA, or 22% of the 2.3 million premises nationally), and in Phase 2 cover the remaining 27k (20% of IA or 1% of premises nationally).
Cost	This option would decrease the initial subsidy costs to State by excluding the most expensive premises. Based on DCCAE's Budget model: [redacted] If at a later time it was planned to deploy a network to serve the most expensive to reach premises, then this would result in an estimated overall increase in the cost greater than any initial saving. Using a phased approach for rollout would result in the loss of efficiencies of a single, large-scale mobilisation and deployment. The most expensive premises are dotted around every townland and not concentrated in any particular geographic area. It would likely be highly inefficient to address these later compared to addressing them while all other premises around them are delivered a service.
Longevity	The services provided would be future proofed.

State aid	A new State aid application may not be necessary.
Procurement	This option could involve multiple procurement processes, depending on decisions made regarding how many premises should be incorporated into each phase.
Key benefits	• A large cohort of IA premises should be reached in line with existing expected timelines.
Challenges	• Loss of economies of scale as it would involve more than one procurement processes • Uncertainty as to when all premises would receive a high speed broadband service

Scenario 1		**% of IA premises**	**% of premises national**
Phase 1	434	80%	19%
Phase 2	108	20%	5%
	542		**24%**

Scenario 2		% of IA premises	% of premises national
Phase 1	515	95%	22%
Phase 2	27	5%	1%
	542		**24%**

Table 1 – Most expensive to reach premises in IA by county (5% and 20%)

85% Coverage Analysis

	Total premises	not covered premises	% of not covered premises
CARLOW	8,291	616	7.40%
CAVAN	18,120	718	4.00%
CLARE	21,726	870	4.00%
CORK	63,161	3,346	5.30%
DONEGAL	35,390	1,994	5.60%
DUBLIN	8,839	902	10.20%
GALWAY	46,044	1,577	3.40%
KERRY	30,356	2,181	7.20%
KILDARE	16,943	951	5.60%
KILKENNY	16,227	437	2.70%
LAOIS	12,303	404	3.30%
LEITRIM	11,139	480	4.30%
LIMERICK	27,014	877	3.20%
LONGFORD	8,685	186	2.10%
LOUTH	8,883	507	5.70%
MAYO	35,660	1,293	3.60%
MEATH	22,038	1,701	7.70%
MONAGHAN	14,330	531	3.70%
OFFALY	11,929	298	2.50%
ROSCOMMON	19,057	1,123	5.90%
SLIGO	13,094	580	4.40%
TIPPERARY	30,115	1,110	3.70%
WATERFORD	12,567	508	4.00%
WESTMEATH	13,931	886	6.40%
WEXFORD	25,102	2,391	9.50%
WICKLOW	10,443	653	6.30%
TOTAL	541,387	27,110	5.01%

80% Coverage Analysis

	Total premises	not covered premises	% of not covered premises
CARLOW	8,291	1,596	19.25%
CAVAN	18,120	4,309	23.78%
CLARE	21,726	4,453	20.50%
CORK	63,161	13,143	20.81%
DONEGAL	35,390	7,575	21.40%
DUBLIN	8,839	3,906	44.19%
GALWAY	46,044	5,833	12.67%
KERRY	30,356	7,491	24.68%
KILDARE	16,943	5,120	30.22%
KILKENNY	16,227	2,547	15.70%
LAOIS	12,303	2,077	16.88%
LEITRIM	11,139	1,238	11.11%
LIMERICK	27,014	3,533	13.08%
LONGFORD	8,685	915	10.54%
LOUTH	8,883	2,407	27.10%
MAYO	35,660	5,301	14.87%
MEATH	22,038	5,078	23.04%
MONAGHAN	14,330	1,496	10.44%
OFFALY	11,929	861	7.22%
ROSCOMMON	19,057	3,288	17.25%
SLIGO	13,094	3,865	29.52%
TIPPERARY	30,115	6,726	22.33%
WATERFORD	12,567	2,907	23.13%
WESTMEATH	13,931	3,314	23.78%
WEXFORD	25,102	6,634	26.43%
WICKLOW	10,443	2,770	26.52%
TOTAL	541,387	108,383	20.02%

Option 6	State subsidised high speed network with a long-term rollout period
Scope	This option would involve subsidising a high speed network broadband to 100% of all IA premises with a long-term rollout period, for example a 10 to 12 year rollout. By way of comparison, under the existing procurement process it is expected that the timeframe for reaching all of the IA premises is 6 years.
Cost	• Spreading the rollout over a longer time period would mean that the rollout costs would be spread over a longer timeframe. • This may reduce the annual subsidy cost to the State over the initial years of the rollout compared to a shorter rollout requirement as less premises would be reached in the initial years. • While the impact on the total cost is unclear vs a shorter rollout period, the overall subsidy required would almost certainly be higher due to a number of factors likely to increase costs or reduce revenues: o The impact of anticipated encroachment from other operators where there is a longer rollout period o Retailers (Sky, Vodafone, Virgin Media, eir, etc) may be less incentivised to sell over a network that has limited reach o It may be more difficult to secure long-term subcontractor commitments. o Fixed operational costs would be incurred over a longer period o Labour inflation over the period would have to be factored in.
Timeline	• The rollout would be spread over a defined period (e.g. 10-12 years), so whilst it would be slower than current expectations, there would be certainty around when all premises would be reached by using a single procurement process. • If the rollout plan was scheduled over a 10 year period, with a similar cohort of premises targeted each year, this would mean about 50k additional premises would receive high speed broadband availability p.a.
Longevity	Services provided would be future proofed.
State aid	A new State aid application may not be necessary
Procurement	This option would involve a single procurement process.
Key benefits	• Single procurement process. • Risks could be better managed by the contractors over a longer rollout period. • Certainty over the rollout period to reach 100% of IA.

	• Potential for reduced annual cost to the State over the initial period of the rollout.
Challenges	• Likely to increase the level of subsidy required • 10 year plus timeline before all premises have a service

Option 7	**State subsidised rollout delivered via individual contracts with commercial operators best suited to specific locations**
Scope	• This option would involve subsidising the rollout of high speed broadband to 100% of IA premises by negotiating contract(s) bilaterally with commercial operators best placed to deliver high speed broadband in specific locations (individual Commitment Agreements). • There are a number of operators already deploying high speed broadband in Ireland i.e. eir, SIRO, Virgin Media who may welcome a bilateral negotiation outside of the scope of the current procurement process for specific services or locations. • There are currently small wireless operators in every part of every county offering basic broadband service. Many of these operators would welcome public investment where they had the opportunity to upgrade their networks. These operators may have advantages over the larger operators, though it would be challenging, given their resources, for them to compete for public monies. • Would enable larger commercial operators to target areas and negotiate with the State based on the best existing network coverage.
Cost	It may be possible to negotiate deals with individual operators who have preferences to rollout out in particular areas, thus delivering cost effective solutions.
Timeline	If contracts are awarded to particular companies who are best placed to deliver services in particular areas, some cohorts could receive services earlier compared to the current plan.
Longevity	Services offered would be subject to the contract requirements.
State aid	A new State aid notification and mapping process would be required.
Procurement	• Larger operators would have a competitive advantage as they would be better placed to negotiate a contract as smaller operators have limited resources to dedicate to a negotiation process

	• Complex negotiation process to manage if a large number of operators decided to participate • Complex management process if there are multiple agreements with different parties operating in different locations • The State could not discriminate against large operators to allow small operators to build locally. The process could result in the same outcome as an overall larger procurement process where one or two operators have the financial capacity to win all contracts. A similar situation has arisen in the UK where BT have won most contracts across the UK.
Key benefits	• Potential for some areas to be covered relatively quickly.
Challenges	• Managing the procurement process with potentially multiple players. • Complexities associated with negotiation contracts to cover 100% of the IA.

Option 8	State subsidised rollout using a Framework Agreement with the Intervention Area subdivided into small geographic lots
Scope	This option would involve designing and implementing a new Intervention Strategy to subsidise the rollout of a highspeed broadband network to 100% of IA. The IA would be divided into small geographic lots which would be awarded under an overall Framework Agreement. A procurement process would be undertaken to allow operators to bid for single/multiple small geographic lots.
Cost	There could be a loss of economies of scale associated with a large scale rollout in the IA by one operator.
Timeline	If lots are awarded to multiple bidders, it may be possible to enable simultaneous rollout in different areas, managed by different operators. It is unclear what impact this would have on the overall timeline.
Longevity	Services offered would be subject to the contract requirements.
State aid	A new State aid application would be necessary. A Framework Agreement was used in the UK.
Procurement	• May provide opportunity for smaller operators to participate in the procurement process, in the geographic areas where they have an existing base, however larger operators would have a competitive advantage as they would be better placed to participate in a Framework Agreement as smaller operators have limited resources to dedicate to a procurement process • Complex procurement process to manage if a large number of operators decided to participate • Complex management process if there are multiple lots with different parties operating in different locations • Opportunity to use different pricing/funding arrangements to reflect cost and degree of lack of commerciality.
Key benefits	• May provide more opportunities for smaller operators to participate in the procurement process

Challenges	• There could be a loss of economies of scale associated with a large scale rollout in the IA by one operator. • Complexity of the procurement process with multiple lots and multiple contracts with different operators • Risk that retailers would not be incentivised to offer services over the State subsidised network as they could potentially have to engage with multiple wholesale operators

Option 9	**Develop a universal service obligation (USO) to deliver high speed broadband to all premises within the IA**
Scope	The current European Framework allows for a Universal Obligation (USO) to all citizens of Functional Internet Access. In Ireland this is currently less than 1Mbps. The USO from Europe which is overseen by ComReg is currently to address access to voice services only. The Electronic Communication Code which is expected to be agreed by the EU Council before end 2018 allows Member States provide for a USO for high speed broadband services. Typically a USO obligation is assigned to a dominant operator with extensive existing infrastructure which could be leveraged to deliver the service. In this case no existing infrastructure/network exists in the target area that can deliver the broadband service, so the operator with the USO obligation would need to build this network. • Direct legislation on a company or companies to provide a defined service • The net cost to the operator is calculated after the build • A consultation on an appropriate USO speed and mechanism for compensating the operator(s) designated to build would be required • Commercial operators may not be willing to participate in a competition to award a USO.
Cost	The USO provider is likely to require similar level of subsidy to that required through an alternative procurement process
Timeline	Rollout would be expected to occur over a similar duration to the Plan A process ([redacted]).
Longevity	The USO requirements may not be future proofed.
State aid	This option would not be covered by State aid but would have to be notified to DG Connect and comply with Directives. State Aid may need to be considered depending on how the USO obligation is written and funded.

Procurement	A procurement process/competition would need to be run to select the USO provider and there is no guarantee that commercial operators would participate in that process\competition
Key benefits	• Rollout would be expected to occur over a similar duration to the Plan A process [redacted]).
Challenges	• The USO requirements may not be future proofed • There are challenges in the identification of the appropriate definition of minimum speeds where the Commission has not yet decided what it should be under a new Directive • New legislation would be required providing powers to ComReg to oversee the build and net cost • It would be difficult to designate a USO company as no operator has high speed broadband infrastructure in the IA

Option 10	**Acquire State control/ownership of critical infrastructure** **Sub-options:** [redacted]
Scope	Re-use of existing infrastructure (such as poles, ducting, towers, masts, local exchanges, fibre etc.) will play a key role in ensuring a speedy and cost efficient rollout of the high speed broadband network under the NBP. As the incumbent, eir (or the Group)[4] is the principal provider of fixed line telecommunications and owns the majority of the existing infrastructure critical to the delivery of the NBP. Eir is therefore best placed to access and leverage its own infrastructure to deliver the NBP whilst achieving Value for Money for the State. ESB is another alternative infrastructure owner. European Commission approval would be required for such a State intervention.
Procurement	N/A/ in the context of acquiring infrastructure, however there would be significant procurement required for subcontractors etc. to carry out the build works on behalf of a State owned company.

4 eircom Holdings (Ireland) Limited and subsidiaries

Option 10(i)	Option 10 Acquire eir (full company)

Scope	The State could seek to acquire a 100% equity stake in eir and hold ownership and control of the Group including its assets critical to the delivery of the NBP, its operational resources and its know-how in relation to efficiently implementing the NBP. Ireland's telecommunication sector is predominantly privately owned and operates in an open and competitive market regulated by ComReg. The acquisition of eir by the State would have a significant impact on the general telecommunications market.
Cost	The upfront costs to the State to acquire assets could be large and likely be on Balance Sheet thereby impacting fiscal space calculations for annual State spending rules. It is estimated that it may cost the State between €3bn and €5bn to acquire eir and deliver the NBP: • Cost of acquisition [redacted] • Cost of funding NBP: [redacted] public funding may be required in addition to the cost of acquisition to deliver the NBP. • Given the telecommunications market dynamics, it is envisaged that any State control of eir would need to be under a "Semi-State" model where the company continues to be operated on a commercial basis. Therefore it is expected that a State Subsidy would remain required by eir to deliver a commercial return in addition to a) the cost of acquisition and b) the cost of funding.

[redacted]

Longevity	The State would be in control of future proofing.
Timeline	The State would be in control of timelines, however acquisition time likely to be long for such complex deals and would delay the commencement of the rollout. It can be reasonably expected for a transaction of this magnitude, if the current owners insisted that the entire business of eir is transferred, could take c.12-24 months to execute before delivery of NBP could commence given the level of due diligence, complexity of such a large Group of companies and business units and likely European Commission oversight.
Key benefits	• The State would have clear asset ownership and control over the existing infrastructure that is critical to delivering the NBP. • The State would have clear ownership and control over an entity capable of efficiently delivering the NBP. • The State would be purchasing a long term interest in the telecommunications infrastructure market which would provide an increased ability to manage potential future market failures. • As a State/Semi-State body a greater level of governance regarding public funds invested. • Potential of net return to the State (post any further Subsidy/State investment) via dividends although this will dependent upon the future success of the entity under State ownership and the performance of the NBP project. May be considered a low likelihood at this stage. • The State would be in control of future proofing.
Challenges	• Eir management cited commercial reasons for withdrawing from the NBP process which included focusing resources on competitive pressures elsewhere in the business. If eir was acquired for the purposes of the NBP it is likely that other aspects of its business would be negatively impacted and this could have negative financial consequences in the future. Eir has nearly 2 million customers in Ireland with a diverse range of services. • It is not envisaged that the State would retain the retail arm of eir should the company as a whole be acquired. It may be possible to carve out this part of the company and sold on as a separate company or the existing owners may sell just the wholesale business. However, the eir Group is very integrated from an operational and systems point of view and breaking up the retail and wholesale arm could be an expensive and long process. • The State would be in control of timelines, however acquisition time likely to be long for such complex deals and would delay the commencement of the rollout

Option 10(ii)	Acquire part of eir (wholesale division)
Scope	eir is an integrated telecommunications company providing fixed line wholesale, fixed line retail and mobile services within the Irish market. Only the wholesale business and related assets is relevant to the NBP. Therefore the State could seek to acquire part of eir's existing business, such as the fixed line wholesale business. Whilst the benefits and risks would be similar to option 9 (i) above, additional observations include;
Key Benefits	• eirs's wholesale business accounts for 48% of revenues and 80% of operating profits.[8] • The cost to acquire part of eir would not be as straightforward as simply taking one of these measures to adjust the total valuation of the Group because other factors would need to be considered such as a) the complexities of separation, b) the loss of synergies, and c) the decreased robustness of revenue streams in the remaining business.,
Challenges	• It is likely that eir will have significant operational dependencies across the business and therefore such a divestment would require an extensive exercise to identify, understand and provide a solution to mitigate the dependencies/complexities on separation. For example, significant processes, assets, people and operations may be shared between Retail and Wholesale, Fixed Line and Mobile. • The process of separation could add c.12-24 months to a transaction process.

[8] HCA_Accounts_2017, page 8

Option 10(iii)	Acquire eir's network relevant to the NBP
Scope	The State may acquire the essential assets for the delivery of the NBP only. The geographically relevant aspects of the passive infrastructure associated with the fixed line wholesale business have been identified as being critical to the NBP.
Key Benefits	• The State would have clear asset ownership and control over the existing infrastructure that is critical to delivering the NBP. This would reduce the risk associated with delivery of the project and therefore may reduce the return that an investor in the project would require. This would reduce the cost to the State. • The State would be purchasing a long term interest in the telecommunications infrastructure market specific to the delivery of the NBP which would provide an increased ability to manage potential future market failures in this geographic area. • The process would not bring the challenge of bringing systems and people and hiving off the rural assets would likely be less complex and more attractive to existing owners.
Challenges	• The value placed upon the assets is likely to be equivalent to the present value of forecast cash flows associated with leasing the assets to NBPCo. Therefore the cost impact to the State of acquisition Vs rental may be negligible but the requirement for upfront funding higher. • [redacted] • State ownership of the existing critical infrastructure removes the risk of 3rd party access/co-operation on the project but it does not provide a solution to engage an entity to finance, build and operate the NBP. This option still requires a company to be procured to build and operate a network to deliver services in the IA.

Option 11	ESB as the contracting authority/project delivery entity
Scope	• ESB would establish a new SPV which would be ringfenced from the ESB Group. • The new SPV would be mandated to deliver high speed broadband to all premises in the Intervention Area. • The SPV would procure the build contractors and operating company, utilising where possible/appropriate the work and engagement with stakeholders to date. • ESB has a national pole infrastructure and an electricity connection into every occupied premises in the country. It may be possible to utilise this infrastructure to deliver high speed broadband to premises in the IA.
Cost	If the SPV were to utilise a deployment plan with eir infrastructure similar to what is proposed in the current procurement process, the cost is likely to be similar. It is not known what the cost would be if it were to use energy infrastructure.
Timeline	It is difficult to predict the time required but it is highly likely to be less efficient than the current procurement process undertaken by a commercial operator in that in addition to the time required to establish the SPV, it would then need to procure contractors and other required resources.
Key benefits	• ESB's corporate brand is strong and it has a strong track record in the delivery of large scale infrastructure projects, managing complex high risk initiatives, with significant planning, program management, design and logistical capabilities which could potentially be leveraged for the deployment of high speed broadband • ESB has extensive commercial experience which could be leveraged in the procurement and management of key subcontractors. • ESB has extensive pole and duct infrastructure in rural Ireland which has been well maintained and refreshed over the past 10 years which could be used in the delivery of a fibre solution to all homes. • ESB has developed telecoms expertise through their own telecoms business unit ESB Telecoms and more recently through their joint venture with Vodafone, SIRO.

Risks/ **Challenges**	Procurement and State Aid risk in the absence of a competitive process Likely to cost at least as much as current procurement process.

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